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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,624	06/15/2001	Ian Wylie	WYLIE 5	8470

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EXAMINER

KIELIN, ERIK J

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 05/21/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/882,624

Applicant(s)

WYLIE, IAN

Examiner

Erik Kielin

Art Unit

2813

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☒ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-4, 7-9, 12, 13, 16, 17, 18, 21-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by **Jang** US 5,391,907.

**Jang** discloses the semiconductor substrate 11, gate 19, source/drain region 20 with a portion formed in the semiconductor substrate and a portion formed on the oxide isolation 18 located in a trench. The channel is formed over the substrate. (See Figs. 2d-2e; col. 2, line 64 to col. 3, line 12.)

Regarding claim 16, Fig. 2e shows the source/drain region of a second transistor at the far right-hand, wherein the isolation region 18 isolates the devices.

3. Claims 1-4, 7-9, 12-13, 16, 17-18, 21-24, 27-30, 33 are rejected under 35 U.S.C. 102(b) as being anticipated by **Murakami** US 4,551,743.

**Murakami** discloses (Fig. 1) the semiconductor substrate 14, gate 21, source/drain regions 19, 20, 52 with a portion formed over the semiconductor substrate

and a portion formed on the oxide isolation 11, located in a trench, and interconnect 17, 18, 24, 25. The channel is formed over the substrate, not over the isolation region. Plural transistors are disclosed which would be separated by the isolation regions 11. Other devices are also shown 16-18, 41-43.

4. Claims 1-32 are rejected under 35 U.S.C. 102(b) as being anticipated by **Tsuchiaki JP 11-274483 A**.

**Tsuchiaki** discloses the semiconductor substrate 11, gates 16a, 19a, source/drain portions 23a, 26a over the oxide isolation regions 12 formed in a trench, which extend through tub (“n-well”) 14 and source/drain portions 22, 25 formed in the semiconductor substrate, located in a trench, and interconnect 17, 18, 24, 25. The channel is formed in the substrate, not over the isolation region. Plural transistors are disclosed which are separated by the isolation regions 12. Interconnect 18, 29 is shown in Fig. 5(i) on the last page. (See also Abstract and all figures -- especially the cover figures.)

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jang** in view of Applicant’s admitted prior art (**APA**).

**Jang**, as explained above, discloses all of the features of the instant invention except for specifically showing the interconnect and other active and passive devices.

Applicant indicates that Fig. 12 shows a conventional integrated circuit (paragraph [0022]) with interconnect 1220 and other active and passive devices and that one of ordinary skill is familiar with these additional elements (paragraph [0044]).

It would have been obvious to one of ordinary skill at the time of the invention to modify Jang to include known interconnect and active and passive device in order to form a functioning circuit, such as a DRAM, because it highly desired in the art to form whole integrated circuits rather than just parts which would, in isolation, be useless.

#### ***Response to Arguments***

7. Applicant's arguments filed 3/27/02 have been fully considered but they are not persuasive.

Applicant argues that none of **Jang**, **Murakami**, and **Tsuchiaki** do not show the claimed feature of a portion of the source/drain regions formed on the isolation regions while a portion of said source/drain regions is in the semiconductor substrate, while said isolation is located in a trench in the semiconductor substrate. Examiner expressly disagrees because it is shown in the figures that each of the applied references has these features.

Further regarding Jang, Examiner respectfully disagrees that he is "quite aware, such a teaching is very different form the claimed subject matter." Rather Examiner is quite aware that Jang meets all of the presently claimed limitations to which the Jang reference has been applied, as very clearly shown in the Jang figures. Further in this

regard, each of the instant claims to which the Jang reference is applied, and the Jang reference, itself, are drawn to MOSFETs formed in a semiconductor substrate which makes it unclear how Applicant could suggest that the claimed subject matter is even remotely different -- much less propose to know what Examiner may be thinking in this regard-- since Jang clearly shows each of the presently claimed features.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication from examiner should be directed to Erik Kielin whose telephone number is (703) 306-5980 and e-mail address is [erik.kielin@uspto.gov](mailto:erik.kielin@uspto.gov). The examiner can normally be reached by telephone on Monday through Thursday 9:00 AM until 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached at (703) 306-2794 or by e-mail at

olik.chaudhuri@uspto.gov. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

EK

May 17, 2002

A handwritten signature in black ink, appearing to read 'Olik Chaudhuri', is positioned above the printed name.

OLIK CHAUDHURI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800